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University of California
College of Agriculture
Agricultural Experiment Station
Berkeley, California

SEASONAL LABOR NEEDS FOR CALIFORNIA CROPS

NAPA COUNTY

Progress Report No. 28

by

R. L. Adams

Preliminary -- Subject to Correction

November, 1936

Contribution from the
Giannini Foundation of Agricultural Economics
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(Farm Labor Survey -- January-June, 1936)

Progress Report No. 28

Seasonal Labor Needs of California Crops

Napa County

Scope of Presentation.-- The following considerations govern the presentation of this progress report:

1. The data are confined to the area indicated above.

2. The data are confined solely to crops, livestock needs being ignored.

3. The findings apply only to occasional or seasonal labor requirements as distinguished from labor contributed by farm operators and by workers employed on a year-round or regular basis of employment.

4. Attention is concentrated upon workers required for hand tasks -- planting, thinning, weeding, hoeing, and harvesting -- without including teamsters, tractor drivers, irrigators, and shed packers of vegetables or fruits.

5. The presentation includes the so-called migratory, transient, or roving workers which comprise an important source of help needed in connection with certain tasks and at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.

6. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems liable to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area.-- Napa County is one of the central counties of California, its southwestern point being about 25 miles north of San Francisco, and near the northern shore of San Pablo Bay. It is bounded on the east by Solano and Yolo counties, on the north by Lake County, and on the west by Sonoma County, which lies between it and the Pacific Ocean. It is irregular in shape, extending about 46 miles north with a width varying up to about 25 miles in the widest place in the northern portion. The county includes a large amount of hilly and mountainous land -- a portion of the Coast Range. The agricultural land lies in a number of valleys, the largest of which is the Napa Valley, extending about 34 miles from Calistoga to the southern boundary, with a width of from 1 to 5 miles, and an elevation varying from sea level to about 300 feet. There are several smaller valleys, notably Berryessa Valley, about 2 miles by 12 miles in extent, in the northeastern part contiguous to Monticello, at an elevation of 300 to 400 feet; Wooden Valley and Gordon Valley, smaller in size, in the southern part, and several others.

The soil of these valleys is largely a clay loam, with small areas of loam and clay. A variety of crops is grown, prunes, pears, and grapes being the most important.

The county contains an area of 501,120 acres of which 102,696 acres are classed as available for crops by the 1935 Census. This is further classified as follows by the Census for the crop year 1934:

	Acreage
Crop land harvested	49,040
Crop failure	705
Crop land idle or fallow	3,490
Plowable pasture	49,461
Total	102,696

TABLE 1

Basis for Calculating Seasonal Labor Requirements
Napa County

Crop	Acreage	Production
Field crops:*		
Alfalfa hay †	1,143	3,162 tons
Corn (for grain) †	220	7,526 bushels
Grain -- barley	4,098	102,289 bushels
oats	3,869	91,768 bushels
wheat	3,263	74,213 bushels
Hay -- grain	7,844	12,326 tons
other tame and wild grasses	1,119	1,762 tons
annual legumes	176	321 tons
Vegetable crops: ‡		
Peas (spring)	300	18,000 hampers
Spinach (canning) †	68	--
Tomatoes (canning)	484	2,600 tons (canning and fresh)
Fruit and nut crops ¶		
Apples	650	(250 tons local) 1,000 tons (750 tons shipped) used fresh (174 tons dried weight ¶) 1,080 (210 tons by-products) tons (fresh weight
Apricots †	120	(50 tons fresh (10 tons dried (dry weight) ¶
Cherries	280	(90 tons shipped (75 tons local (190 tons barrelled
Grapes	11,700	(17,500 tons crushed (3,500 tons shipped
Pears	2,025	(70 tons shipped (1,410 tons canned (200 tons local (340 tons dried (dry weight) ¶
Prunes	12,500	15,750 tons (dry weight) ¶
Plums †	75	250 tons fresh
Walnuts	625	200 tons (310,900 pounds (merchantable
Peaches †	100	(150 tons fresh (40 tons dried (dry weight)

* Data from 1935 Census

† Use of seasonal labor on these crops inconsequential and hence ignored. No material change in fruit acreage on new survey.

‡ Acreage of vegetable crops is from Federal-State Crop Reporting Service. Acreage of specified commercial vegetable crops by counties, 1935.

§ Fruit and nut data from W. D. Butler, Agricultural Commissioner.

¶ Drying ratios estimated to be as follows:

Apples -- 8 to 1
Apricots-- 5.5 to 1
Pears -- 5 to 1
Prunes -- 2.25 to 1

Operations Requiring Seasonal Labor and Time of Need.-- Farm operations requiring the use of seasonal or occasional labor for the various crops raised in Napa County are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack, and prepare various commodities for shipping and marketing.

TABLE 2

Operations Requiring Use of Seasonal Labor and Times of Needs by Crops
Napa County

Crop	Operation	Time of need by month	Per cent of work done by seasonal help	Output per man-day
Field crops: Grain -- barley, oats and wheat	Harvesting with combine	June 1-30 -- 50 per cent of crop July 1-31 -- 50 per cent of crop	50	.5 acres
Hay (other than alfalfa)	Mowing	May 1-31 -- all of acreage	50	7.5 acres
	Raking	May 1-31 -- all of acreage		15.0 acres
	Shocking	May 1-31 -- all of acreage		30.0 acres
	Trimming	May 1-31 -- all of job		10 tons
	Baling -- 50 per cent of crop	June 1-30 -- 50 per cent of job July 1-31 -- 50 per cent of job	100	8 tons per 13 hour day
Vegetable crops: Peas (green)	Picking	May 15-31 -- 50 per cent of crop June 1-15 -- 50 per cent of crop	100	10 hampers

Table continued on next page.

TABLE 2

Operations Requiring Use of Seasonal Labor and Times of Needs by Crops
Napa County

Crop	Operation	Time of need by month	Per cent of seasonal help by month	Output per man-day
Field crops: Grain — barley, oats and wheat	Harvesting with combine	June 1-30 — 50 per cent of crop July 1-31 — 50 per cent of crop	80	15 acres
Hay (other than alfalfa)	Mowing	May 1-31 — all of average	80	1½ tons
	Raking	May 1-31 — all of average		15% tons
	Shocking	May 1-31 — all of average		30% tons
	Trimming	May 1-31 — all of job		10 tons
	Baling — 80 per cent of crop	June 1-30 — 80 per cent of job July 1-31 — 80 per cent of job	100	6 tons per 10 hour day
Vegetable crops: Peas (green)	Picking	May 10-31 — 60 per cent of crop June 1-15 — 60 per cent of crop	100	10 hampers

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Table 2 continued.

Crop	Operation	Time of need by month	Per cent of work done by seasonal help	Output per man-day
Tomatoes	Transplanting in beds	March 1-15 -- all of job	66	5,000 plants
	Planting in field (by machine)	April 20-30 -- 40 per cent of acreage May 1-15 -- 60 per cent of acreage	66	1.6 acres
	Hoeing -- 2 times	June 1-30 -- all of acreage July 1-31 -- all of acreage	100	2 acres
	Picking	Aug. 20-31 -- 5 per cent of crop Sept. 1-30 -- 60 per cent of crop Oct. 1-31 -- 35 per cent of crop	100	2,000 pounds
Fruit and nut crops: Apples	Pruning	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	60	0.25 acre
	Burning brush	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	75	1 acre
	Spraying -- 5 times	Dec.--1/3 of acreage Jan.--1/3 of acreage Feb.--1/3 of acreage Apr. -- all of acreage May -- 150 per cent of acreage June -- 150 per cent of acreage	66	2.0 acres
	Thinning -- 50 per cent of acreage	May 20-31 -- 50 per cent of job June 1-10 -- 50 per cent of job	90	average about 1/3 acre (varies greatly)

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Crop	Operation	Time of need by month	Per cent of seasonal help work done by man-day	Output per
Tomatoes	Transplanting in field	March 1-15 -- all of job	65	8,000 plants
	Planting in field (by machine)	April 20-30 -- 60 per cent of acreage May 1-15 -- 80 per cent of acreage	85	1.6 acres
	Hoeing -- 2 times	June 1-30 -- all of acreage July 1-31 -- all of acreage	100	2 acres
	Yielding	Aug. 20-31 -- 8 per cent of crop Sept. 1-30 -- 60 per cent of crop Oct. 1-31 -- 32 per cent of crop	100	2,000 pounds
Fruit and nut crops: Apples	Pruning	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	60	0.25 acre
	Burning brush	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	75	1 acre
	Spraying -- 8 times	Dec.-1/3 of acreage Jan.-1/3 of acreage Feb.-1/3 of acreage Apr. -- all of acreage May -- 150 per cent of acreage June -- 150 per cent of acreage	65	2.0 acres
	Thinning -- 50 per cent of acreage	May 20-31 -- 50 per cent of job June 1-10 -- 50 per cent of job	90	average about 1/3 acre (varies greatly)

Table continued on next page.

Table 2 continued

Crop	Operation	Time of need by month	Per cent of work done by seasonal help	Output per man-day
Apples (cont.)	Picking for use (fresh)	July 15-31 -- 30 per cent of job Aug. 1-31 -- 70 per cent of job	100	2,000 pounds
	Picking up for drying and by-products	July 15-31 -- 30 per cent of job Aug. 1-31 -- 70 per cent of job	100	2,800 pounds
Cherries	Picking	May 10-30 -- 25 per cent of crop June 1-20 -- 75 per cent of crop	100	200 pounds
Grapes	Pruning -- all acreage annually	Jan. 1-31 -- 30 per cent of acreage Feb. 1-28 -- 50 per cent of acreage March 1-31 -- 20 per cent of acreage	50	0.75 acre
	Burning brush	Jan. 1-31 -- 30 per cent of acreage Feb. 1-28 -- 50 per cent of acreage March 1-31 -- 20 per cent of acreage	50	5.0 acres
	Hoeing and suckering	By regular help	--	--
	Picking (for wineries)	Sept. 1-30 -- 75 per cent of crop Oct. 1-31 -- 25 per cent of crop	100	2,400 pounds
Pears	Pruning	Nov. 1-30 -- 15 per cent of job Dec. 1-31 -- 25 per cent of job Jan. 1-31 -- 25 per cent of job Feb. 1-28 -- 25 per cent of job March 1-15 -- 10 per cent of job	50	0.2 acre
	Burning brush	Nov. 1-30 -- 15 per cent of job	50	3.0 acres

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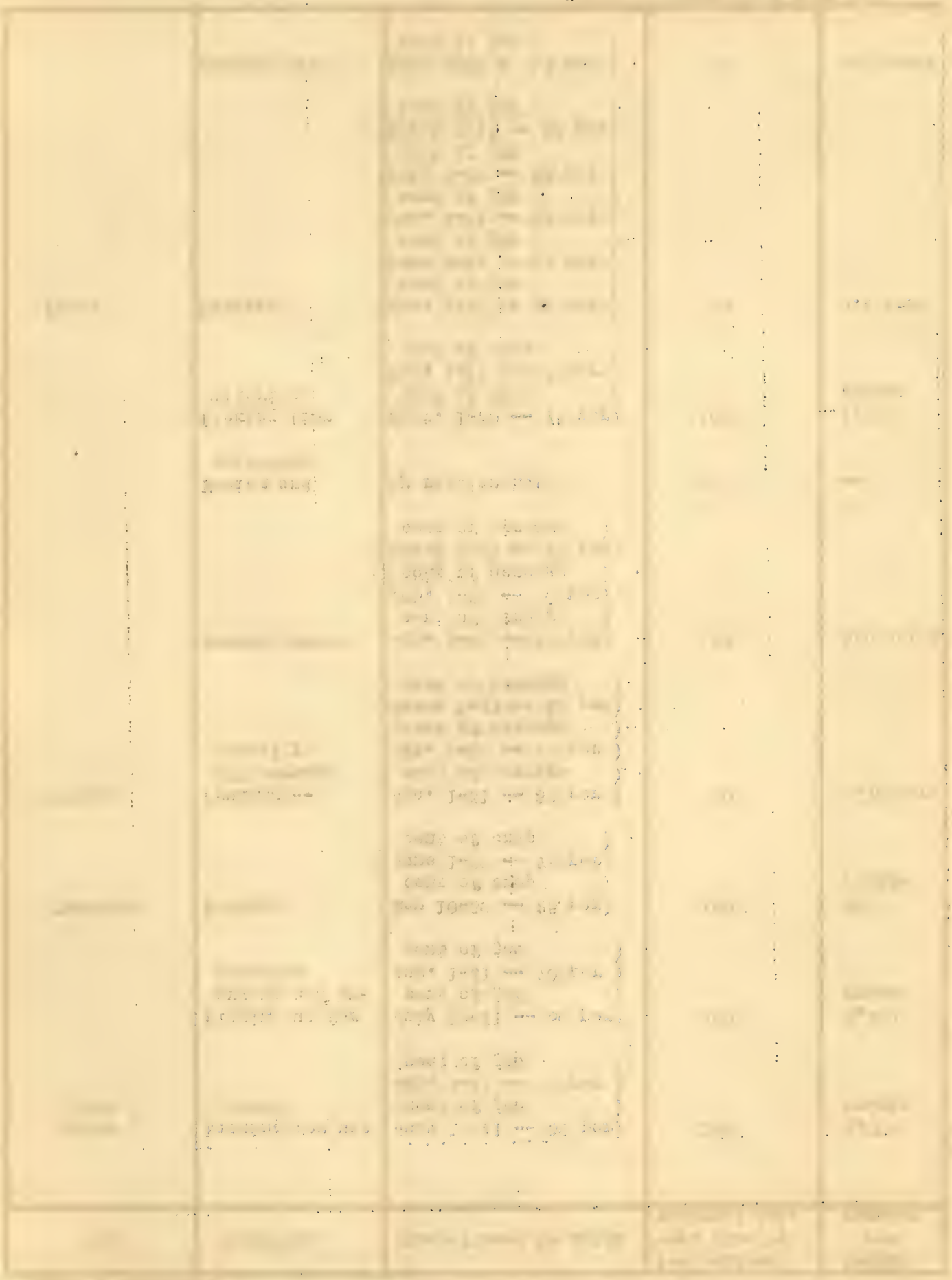

Table 2 continued.

Crop	Operation	Time of need by month	Per cent of work done by seasonal help	Output per man-day
Pears (cont.)	Burning brush (cont.)	Dec. 1-31 -- 25 per cent of job Jan. 1-31 -- 25 per cent of job Feb. 1-28 -- 25 per cent of job March 1-15 -- 10 per cent of job		
	Picking	July 15-31 -- 1/3 of crop Aug. 1-31 -- 2/3 of crop	100	1,600 pounds
	Cutting for drying	Aug. 1-31 -- all of job	100	1,000 pounds
	Other dry-yard labor	Aug. 1-31 -- 75 per cent of job Sept. 1-15 -- 25 per cent of job	100	26 1/2 hours per fresh ton
Prunes	Pruning -- 50 per cent of acreage annually	Oct. 1-31 -- 5 per cent of job Nov. 1-30 -- 10 per cent of job Dec. 1-31 -- 25 per cent of job Jan. 1-31 -- 25 per cent of job Feb. 1-28 -- 25 per cent of job Mar. 1-15 -- 10 per cent of job	75	0.5 acre
	Burning brush	Oct. 1-31 -- 5 per cent of job Nov. 1-30 -- 10 per cent of job Dec. 1-31 -- 25 per cent of job Jan. 1-31 -- 25 per cent of job Feb. 1-28 -- 25 per cent of job Mar. 1-15 -- 10 per cent of job	75	2.5 acres
	Spraying	January Feb. -- generally by regular help	--	--

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Table 2 continued.

Crop	Operation	Time of need by month	Per cent of work done by seasonal help	Output per man-day
Prunes (cont.)	Picking up	Aug. 15-31 -- 50 per cent of crop Sept. 1-20 -- 50 per cent of crop	100	1,500 pounds
	Dipping and drying -- 50 per cent by dehydrator	Aug. 15-31 -- 40 per cent of job Sept. 1-20 -- 60 per cent of job	100	8.3 hours per fresh ton †
Walnuts	Knocking and picking up	Sept. 20-30 -- 25 per cent of job Oct. 1-31 -- 75 per cent of job	50	300 pounds
	Hulling -- by regular help		--	--

*Tomatoes are generally planted 1,200 per acre -- an extra 20 per cent of plants allowed for replanting.

†From Christie, A. W. and L. C. Barnard. The principles and practice of sun-drying fruit. California Agr. Exp. Sta. Bul. 388:40-60. 1925

Findings of Seasonal Labor Needs.-- Details and summaries of seasonal labor requirements of Napa County agriculture are presented as table 3. The "size of task" are figures drawn from table 1 in terms of either acreage or output in tons, crates, boxes or whatever unit is commonly used. The "output per man-day" is an average figure for the entire acreage or output figured in crates, hampers, boxes or other units as indicated in the table. If the work is of a nature that requires a crew, different members of which perform different tasks, then the average shown is per man based on the entire crew. Length of day is 9 hours, November to February; 10 hours, March to October, unless otherwise stated. Wide variations in output occur between farm and farm, field and field, and season and season, because of differences in soil types, climatic conditions, weeds, yields, and other factors influencing the amount of work that a laborer can perform in a given day. Moreover, the basis of output is a mature, experienced male worker without reference to use of women, children, and more or less inexperienced help that is sometimes used in connection with certain of the tasks requiring use of seasonal workers. The column headed "available days" reflects (a) limitations set from the period within which the work must be performed because of the nature of the task, such as transplanting, thinning, weeding, and cutting, and (b) available days as determined by weather conditions, inclement weather reducing the number of days when a required task can be performed. The "required number of individuals" is given in terms of workers as noted above in connection with "output per man-day".

It is probable that the estimated number of workers required, as recorded in table 3, will often be too low, for the reason that "peaks" frequently occur, during which an unusually large proportion of the job is done in a very short period. This would naturally require a much greater number of workers than when the work is spread over a longer period, even though the total amount of labor (in man-days) remains the same.

TABLE 3

Seasonal Labor Needs -- Napa County -- by Months and Tasks

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
January	Apples: Pruning	130 acres †	0.25 acre	520	15	35
	Burning brush	162 acres †	1.0 acre	162	15	11
	Spraying	143 acres †	2.0 acres	72	15	5
	Grapes: Pruning	1,755 acres †	0.75 acre	2,340	15	156
	Burning brush	1,755 acres †	5.0 acres	351	15	24
	Pears: Pruning	254 acres †	0.2 acre	1,270	15	25
	Burning brush	254 acres †	3.0 acres	85	15	6
	Prunes: Pruning	1,172 acres †	0.5 acre	2,344	15	157
	Burning brush	1,172 acres †	2.5 acres	469	15	32
	Totals			7,613	15	508 man-months
February	Apples: Pruning	130 acres †	0.25 acre	520	19	28
	Burning brush	162 acres †	1.0 acre	162	19	9
	Spraying	143 acres †	2.0 acres	72	19	4
	Grapes: Pruning	2,925 acres †	0.75 acre	3,900	19	206
	Burning brush	2,925 acres †	5.0 acres	585	19	31
	Pears: Pruning	254 acres †	0.2 acre	1,270	19	67
	Burning brush	254 acres †	3.0 acres	85	19	5
	Prunes: Pruning	1,172 acres †	0.5 acre	2,344	19	124
	Burning brush	1,172 acres †	2.5 acres	469	19	25
	Totals			9,407	19	496 man-months
March	Tomatoes: Transplanting in beds	460,000 plants †‡	5,000.0 plants	92	9	11 (March 1-15)
	Grapes: Pruning	1,170 acres †	0.75 acre	1,560	19	83
	Burning brush	1,170 acres †	5.0 acres	234	19	13
	Pears: Pruning	100 acres †	0.2 acre	500	9	56 (March 1-15)
	Burning brush	100 acres †	3.0 acres	34	9	4 (March 1-15)
	Prunes: Pruning	469 acres †	0.5 acre	938	9	105 (March 1-15)
	Burning brush	469 acres †	2.5 acres	188	9	21 (March 1-15)
	Totals			3,546	19	187 man-months

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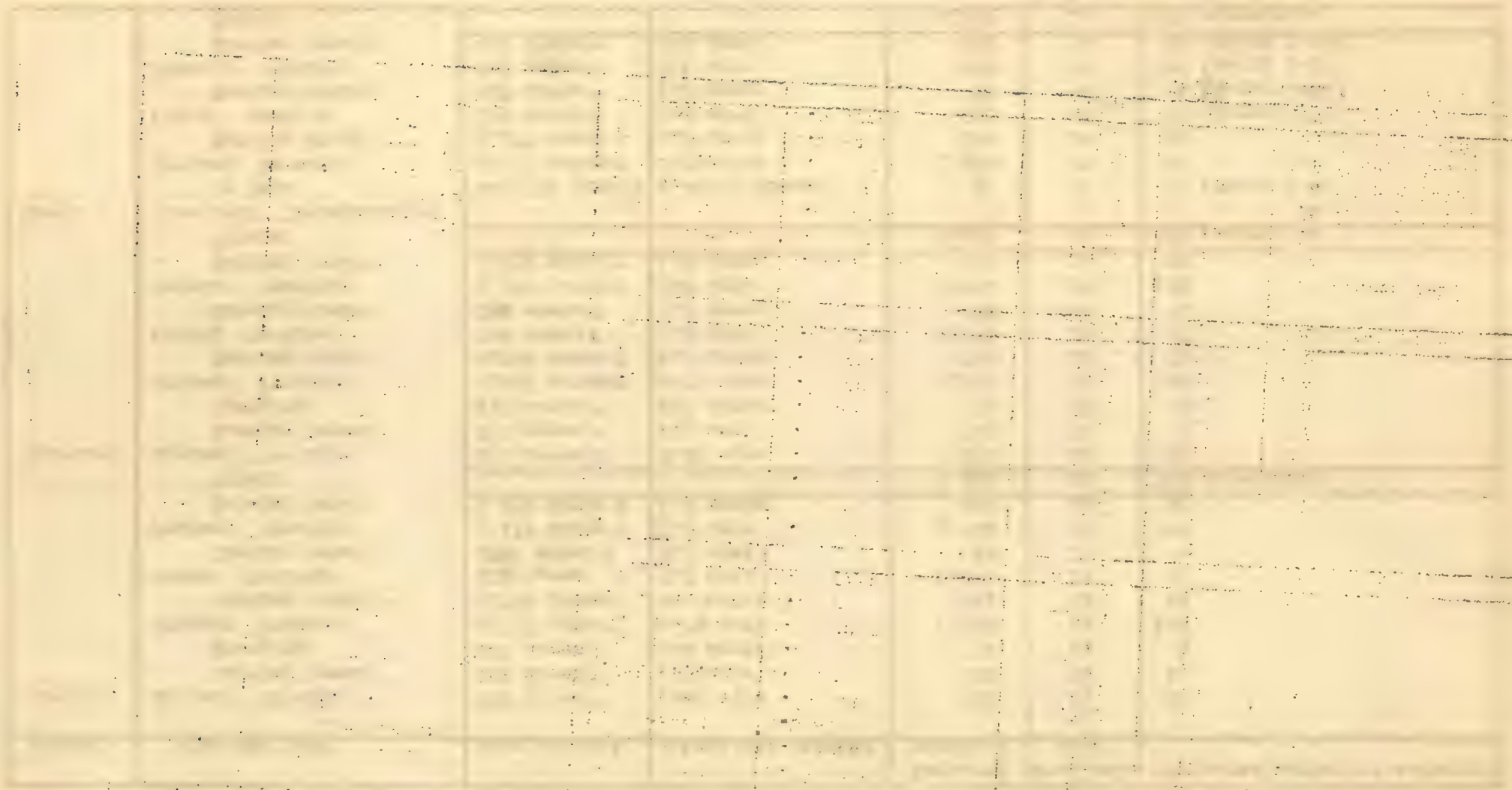

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers
April	Tomatoes: Planting in field	128 acres †	1.6 acres	80	8	10 (April 20-30)
	Apples: Spraying	429 acres †	2.0 acres	215	22	10
	Totals			295	22	14
May	Hay (other than alfalfa) Mowing	4,570 acres†	7.5 acres	610	23	27
	Raking	4,570 acres†	15.0 acres	305	23	14
	Shocking	4,570 acres†	30.0 acres	153	23	7
	Trimming	7,205 tons†	10.0 tons	721	23	32
	Peas (green): Picking	9,000 hampers	10.0 hampers	900	12	75 (May 15-31)
	Tomatoes: Planting in field	192 acres †	1.6 acres	120	11	11 (May 1-15)
	Apples: Spraying	643 acres †	2.0 acres	322	23	14
	Thinning	146 acres †	0.33 acres	443	8	56 (May 20-31)
	Cherries: Picking	70 tons	200.0 pounds	700	16	44 (May 10-31)
	Totals			4,274	23	186 man-months
June	Grain: Harvesting with combine	2,808 acres†	5.0 acres	562	26	22
	Hay (other than alfalfa): Baling	3,602 tons	8.0 tons	451	26	18
	Peas (green): Picking	9,000 hampers	10.0 hampers	900	13	70 (June 1-15)
	Tomatoes: Hoeing	484 acres	2.0 acres	242	26	10
	Apples: Spraying	643 acres †	2.0 acres	322	26	13
	Thinning	146 acres †	0.33 acre	443	8	56 (June 1-10)
	Cherries: Picking	210 tons	200.0 pounds	2,100	20	105 (June 1-20)
	Totals			5,020	26	194 man-months
July	Grain: Harvesting with combine	2,807 acres†	5.0 acres	562	26	22
	Hay (other than alfalfa): Baling	3,602 tons	8.0 tons	451	26	18
	Tomatoes: Hoeing	484 acres	2.0 acres	242	26	10
	Apples: Picking for use fresh	300 tons	1.0 ton	300	13	24 (July 15-31)
	Picking up for drying and by-products	324 tons	2,800 pounds	232	13	18 (July 15-31)
	Pears: Picking	1,127 tons	1,600 pounds	1,409	13	109 (July 15-31)
	Totals			3,196	26	123 man-months

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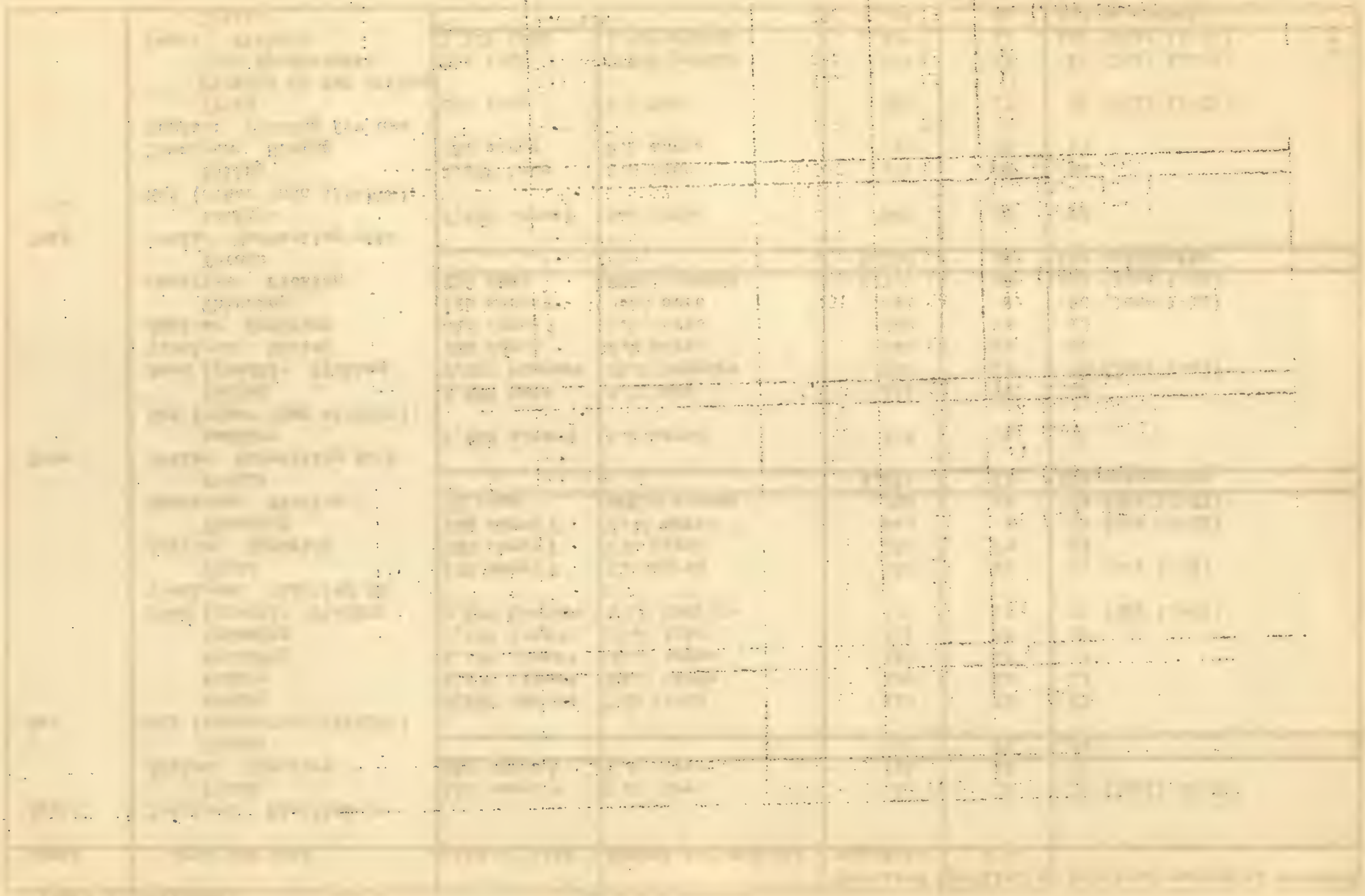

Table 3 continued

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
August	Tomatoes: Picking	130 tons	1.0 ton	130	9	15 (Aug. 20-31)
	Apples: Picking for use fresh	700 tons	1.0 ton	700	26	27
	Picking up for drying and by-products	756 tons	2,800.0 pounds	540	26	21
	Pears: Picking	2,253 tons	1,600.0 pounds	2,817	26	109
	Cutting for drying	1,700 tons	1,000.0 pounds	3,400	26	131
	Other dry-yard labor	1,275 tons	ϕ	3,374	26	130
	Prunes: Picking up	17,719 tons	1,500 pounds	23,626	13	1,818 (Aug. 15-31)
	Dipping and drying	14,175 tons	ϕ	11,813	13	909 (Aug. 15-31)
	Totals			46,400	26	1,785 man-months
September	Tomatoes: Picking	1,560 tons	1.0 ton	1,560	26	60
	Grapes: Picking	15,750 tons	2,400.0 pounds	13,125	26	505
	Pears: Other dry-yard labor	425 tons	ϕ	1,125	13	87 (Sept. 1-15)
	Prunes: Picking up	17,719 tons	1,500.0 pounds	23,626	17	1,390 (Sept. 1-20)
	Dipping and drying	21,263 tons	ϕ	17,720	17	1,043 (Sept. 1-20)
	Walnuts: Knocking and picking up	25 tons †	300.0 pounds	167	9	19 (Sept. 20-30)
	Totals			57,323	26	2,205 man-months
October	Tomatoes: Picking	910 tons	1.0 ton	910	22	42
	Grapes: Picking	5,250 tons	2,400.0 pounds	4,375	22	199
	Prunes: Pruning	234 acres †	0.5 acre	468	22	22
	Burning brush	234 acres †	2.5 acres	94	22	5
	Walnuts: Knocking and picking up	75 tons †	300.0 pounds	500	22	23
	Totals			6,347	22	289 man-months
November	Pears: Pruning	150 acres †	0.2 acre	750	22	35
	Burning brush	150 acres †	3.0 acres	50	22	3
	Prunes: Pruning	468 acres †	0.5 acre	936	22	43
	Burning brush	468 acres †	2.5 acres	188	22	9
	Totals			1,924	22	88 man-months
December	Apples: Pruning	130 acres †	0.25 acre	520	18	29
	Burning brush	162 acres †	1.0 acre	162	18	9
	Spraying	143 acres †	2.0 acres	72	18	4

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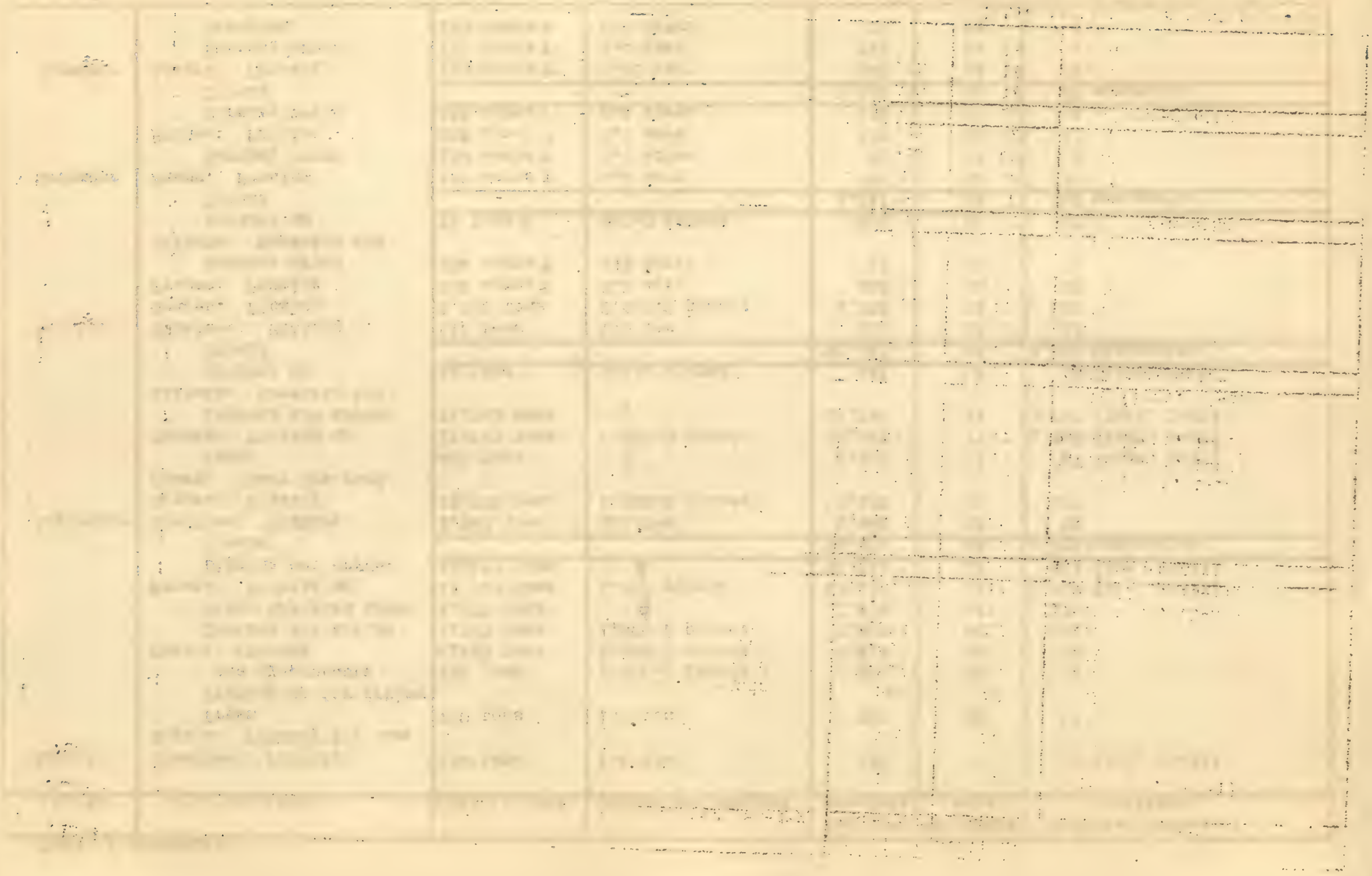

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
December (cont.)	Pears: Pruning	254 acres †	0.2 acre	1,270	18	71
	Burning brush	254 acres †	3.0 acres	85	18	5
	Prunes: Pruning	1,172 acres †	0.5 acre	2,344	18	131
	Burning brush	1,172 acres †	2.5 acres	469	18	27
	Totals			4,922	18	274 man-months

*On a monthly basis unless otherwise noted.

†Estimated portion of job done by seasonal workers.

‡Twenty per cent added to allow for replanting needs.

§Dry-yard labor, other than cutting, estimated to be as follows:

Pears -- 26.5 man-hours per fresh ton.
Prunes -- 8.3 man-hours per fresh ton.

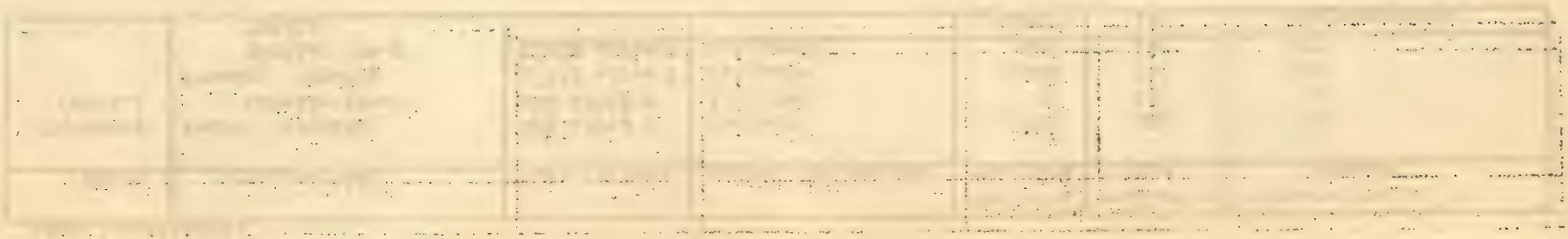

TABLE 4

Summary of Seasonal Labor Needs by Months
Napa County
1935

Month	Required man-days of seasonal labor	Available work days	Required man-months of seasonal labor
January	7,613	15	508
February	9,407	19	496
March	3,546	19	187
April	295	22	14
May	4,274	23	186
June	5,020	26	194
July	3,196	26	123
August	46,400	26	1,785
September	57,323	26	2,205
October	6,347	22	289
November	1,924	22	88
December	4,922	18	274
Total	150,267	--	6,349

Notes

Notes on Table 2.-- Data concerning "time of need" as shown in this table break down required seasonal labor into the periods in which the work is performed in order to permit a subsequent determination of labor needs by months (table 3). Some operations are performed only to a limited extent with seasonal labor. For example, only about half the pruning of grapes and pears is done with seasonal workers; half of the labor in harvesting grain, etc. Each of these jobs having been done in several different months, the proportionate amount for each month is shown.

The amount of work done each month is based on the cropping program followed in 1935. The allotting of amounts of work is based on findings concerning local farm practices, resulting from inquiry of producers. Proportionate amounts of output harvested each month were determined from data of local practices with respect to harvesting, and from carlot shipments of perishable products. Records of truck shipments were also used when available.

Notes on Table 3.-- Table 3 is the condensed summary of labor needs as worked out for Napa County as a result of findings pertinent to 1935. The data are presented by months with the tasks which were performed in each month indicated by both crop and task. The size of the job was calculated from the data appearing in table 1 (acreage and production) and table 2 (task, time of performance, and percentage of work pertinent to a given month). The output per man-day was calculated as indicated in the foreword presenting table 3. The number of required man-days is a result of dividing the size of task by output per man-day. The available days for the different tasks involve two variables. The first is the number of days when field work is possible because of favorable weather conditions. The basis for this column was determined from a study of the monthly weather charts of the United States Weather Bureau for the years 1933, 1934, and 1935. These data indicated available days per month as follows (based on a 26-day working month without allowance for holidays):

Month	Available days*	Length of work day †	Month	Available days*	Length of work day †
		hours			hours
January	15	9	July	26	10
February	19	9	August	26	10
March	19	10	September	26	10
April	22	10	October	22	10
May	23	10	November	22	9
June	26	10	December	18	9

*Based on precipitation records of the Napa station of the U. S. Weather Bureau for the years 1933, 1934 and 1935.

†On some farms days are 8 hours in winter and 9 hours in summer.

The second factor influencing the number of available days was the size of the job. If the task was small, then the number of days was limited to the time needed to do the work efficiently. If a field operation had to be performed in a period less than the number of available days in the month, then the specific number of days was noted. These restrictions are shown in parentheses. For example, in June, thinning of apples was limited to 8 days in the first part of the month, cherries to the first 20 days, etc.

The totals of table 3 show the total required man-days of needed seasonal labor, the available days for field work during the month, and the necessary number of men (as defined in the opening paragraph of table 3) required on a monthly basis to care for the tasks ordinarily performed by seasonal workers.

The findings as set forth in this report are bound to fluctuate materially from year to year, because of the influence of the market outlook upon what and how much is planted, and when it is planted, because of variable seasonal conditions affecting yields, times of performing operations, and available days; and because of harvesting operations on certain crops being speeded up to supply a good market, or retarded to avoid a poor one, resulting in marked variations in the need for harvest labor.